

Panasonic

Stereo Radio Cassette Recorder

RX-FS470

Operating Instructions



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Before connecting, operating or adjusting this product,
please read these instructions completely.

Please note them in the space provided below and retain them for future reference.

SERIAL NUMBER _____

CAUTION:
TO PREVENT ELECTRIC SHOCK
MATCH WIDE BLADE OF PLUG TO
WIDE SLOT. FULLY INSERT.

CAUTION:

Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO REDUCE THE RISK OF FIRE OR
ELECTRIC SHOCK, DO NOT EXPOSE
THIS APPLIANCE TO RAIN OR MOIS-
TURE.

Precautions

Before using this unit please read these operating instructions carefully. Take special care to follow the warnings indicated on the unit itself as well as the safety suggestions listed below.

Afterwards keep them handy for future reference.

Safety

1. **Power Source** -- The unit should be connected to power supply only of the type described in the operating instructions or as marked on the unit.
2. **Polarization** -- If the unit is equipped with a polarized AC power plug (a plug having one blade wider than the other), that plug will fit into the AC outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
3. **Power Cord Protection** -- AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
4. **Nonuse Periods** -- When the unit is not used, turn the power off. When left unused for a long period of time, the unit should be unplugged from the household AC outlet.

Installation

Environment

- 1. Water and Moisture** -- Do not use this unit near water—for example, near a bathtub, washbowl, swimming pool, or the like. Damp basements should also be avoided.
- 2. Heat** -- The unit should be situated away from heat sources such as radiators and the like. It also should not be placed in temperatures less than 5°C (41°F) or greater than 35°C (95°F).

Placement

1. **Ventilation** -- The unit should be situated so that its location or position does not interfere with its proper ventilation. Allow 10 cm (4") clearance from the rear of the unit.
2. **Foreign Material** -- Care should be taken so that objects do not fall into and liquids are not spilled into the unit. Do not subject this unit to excessive smoke, dust, mechanical vibration, or shock.
3. **Magnetism** -- The unit should be situated away from equipment or devices that generate strong magnetism.
4. **Stacking** -- Do not place heavy objects, other than system components, on top of the unit.
5. **Surface** -- Place the unit on a flat, level surface.
6. **Carts and Stands** -- The unit should be used only with a cart or stand that is recommended by the manufacturer. The unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn.
7. **Wall or Ceiling Mounting** -- The unit should not be mounted to a wall or ceiling, unless specified in this operating instructions.



Maintenance

Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

Service

1. **Damage Requiring Service** -- The unit should be serviced by qualified service personnel when:
 - (a) The AC power supply cord or the plug has been damaged; or
 - (b) Objects have fallen or liquid has been spilled into the unit; or
 - (c) The unit has been exposed to rain; or
 - (d) The unit does not appear to operate normally or exhibits a marked change in performance; or
 - (e) The unit has been dropped, or the enclosure damaged.
2. **Servicing** -- The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Listening caution

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion — and, most importantly, without affecting your sensitive hearing. Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels* is included for your protection.

*The level used here is different from that displayed on the system's display.

Decibel

Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.

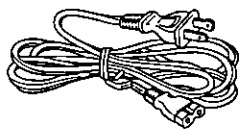
THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.



Supplied Accessory

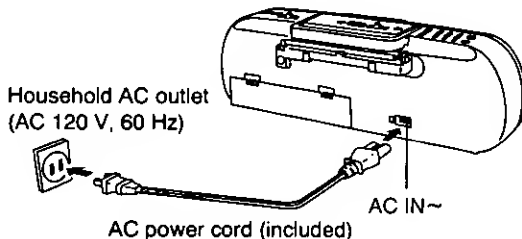


AC power cord 1 pc.
(SJA175-A)

Power Sources

To operate AC power

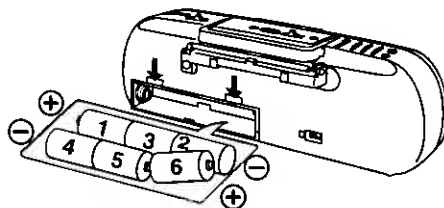
Connect the AC power cord (included).



To operate on battery power

Unplug the AC power cord from the household AC outlet and the AC socket of the unit.

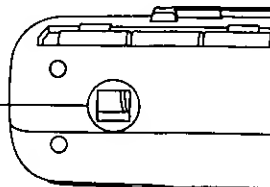
Insert six "D" size (R20/LR20 or equivalent, not included) batteries into the battery compartment in the designated numerical order.



- Batteries installed with incorrect polarities may leak and damage this unit.
- Do not mix batteries (old and new) or types (carbon and alkaline, etc.).
- If the set is not used for a long period of time or is used only from an AC power source, remove the batteries to prevent potential damage from possible battery leakage.
- If you cannot open the cassette compartment cover and eject cassette tape when running this unit on batteries, replace the batteries with new ones, or use AC power source, and then perform the operation once again.

Battery removal:

Insert your finger, and then push out the batteries.
(The bottom of this unit.)



Battery life:

When the batteries get weak, the sound will become distorted and the volume will decrease.

Listening to Radio Broadcasts

A

1



Set **SELECTOR** to **RADIO**.

2

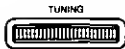


Set **BAND** to the desired radio band.

FM STEREO: To receive FM stereo broadcasts
(If you have tuned into an FM stereo broadcast, the FM STEREO indicator will light.)
AM: To receive AM broadcasts

•If FM stereo reception is poor, set **BAND** to **FM**. This will reduce the noise and provide clear reception; however, the broadcast will not be heard in stereo.

3



Use **TUNING** to tune into a desired broadcast.

4



Adjust **VOLUME**, **GRAPHIC EQUALIZER** and **XBS**.

To turn off the radio:

Set **SELECTOR** to **TAPE/ OFF**.

Adjust the antennas **B**

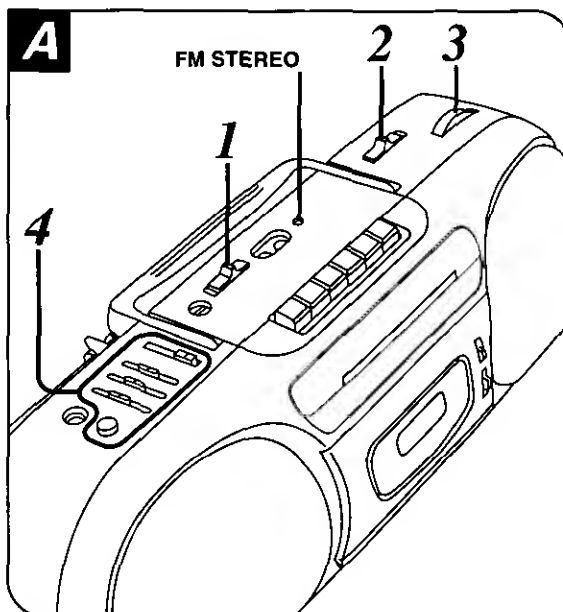
FM:

Pull out the telescopic antenna and adjust its length and angle for optimum reception.

AM:

Turn the unit in the direction which gives the best results.

A

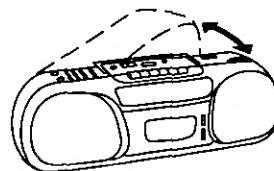


B

FM








AM



Listening to Tapes

A

- 1**  Set **SELECTOR** to **TAPE/OFF**.
- 2**  Press **STOP/EJECT**, and then insert the tape.
You can use normal tapes only.
Insert the cassette with the exposed tape facing up.
- 3**  Set **REVERSE MODE** into the desired mode.
(See page 7.)
- 4**  Press **PLAY** to start playback.
- 5**  Adjust **VOLUME**, **GRAPHIC EQUALIZER** and **XBS**.

To reverse the playback side:

Press **DIRECTION**.

To stop the playback:

Press **STOP/EJECT**.

To briefly interrupt the playback:

Press **PAUSE**.

To resume playback, press **PAUSE** again.

To fast forward or rewind the tape **B**

Press **◀-FAST->** while the tape is stopped.

The tape will start moving at high speed.

To stop the fast forward or rewind operation, press **STOP/EJECT**.

Note:

Do not press **PLAY** during fast forward or rewind, as this may jam the tape.

Always press **STOP/EJECT** first, between functions.

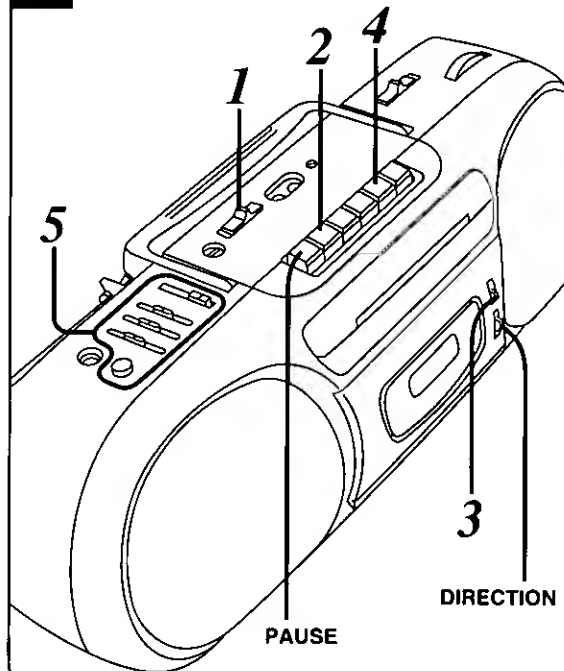
Auto-Stop:

During playback or recording, when the tape reaches its end, the automatic stop system will release the playback and record buttons and automatically turn the unit off. During tape playback, if the reverse mode selector is set to "◀" position, the automatic stop system does not function.

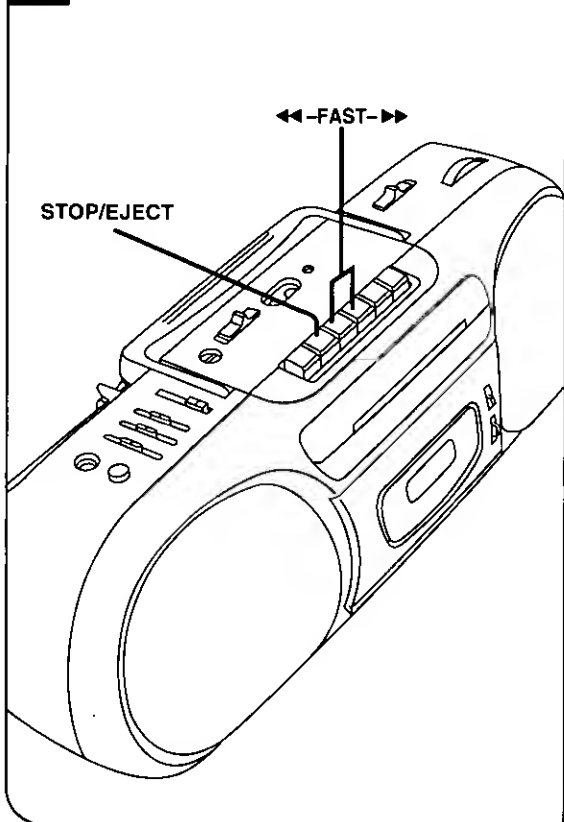
Note:

When the tape reaches the end by pressing the fast button, the automatic stop system does not function. The tape will stop, but the motor continues to turn. Do not leave the set in this condition. Be sure to press **STOP/EJECT** button.

A



B



XBS (extra bass system)

When the XBS switch is set to "ON", the dynamic low frequency ranges are boosted. Adjust the level by using the XBS level control. Using this system with graphic equalizer helps you to get more dynamic sounds.

GRAPHIC EQUALIZER

It allows you to tailor the frequency response of the unit to compensate for room acoustics and other factors which affect frequency response. The overall tone can be altered by adjusting the controls which controls the following frequency bands; 100 Hz, 1 kHz, 10 kHz.

Positioning the control to the "+" side of the detent (center) will amplify the corresponding frequency band; the "-" side will attenuate it.

If the XBS switch is set to "ON", the 100 Hz control functions as an XBS level control.

AUTO REVERSE SYSTEM

This unit is equipped with an auto reverse function that allows you to perform two-side playback or repeat two-side playback. If the direction button is pressed during the tape playback, the reverse side of the cassette tape can be heard.

Two-side playback mode ()

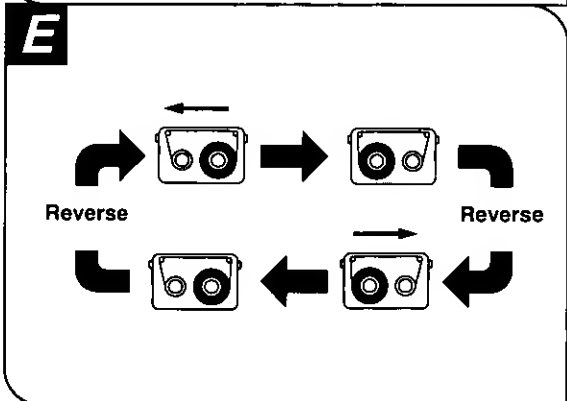
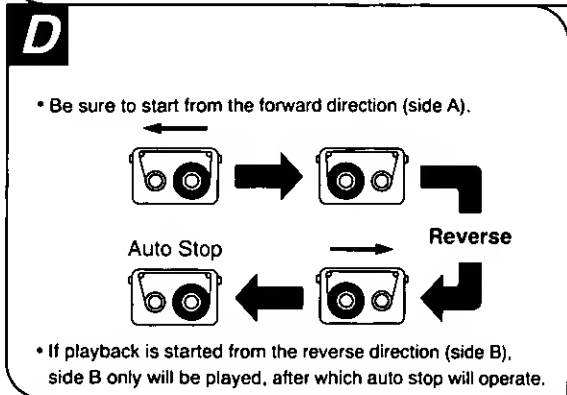
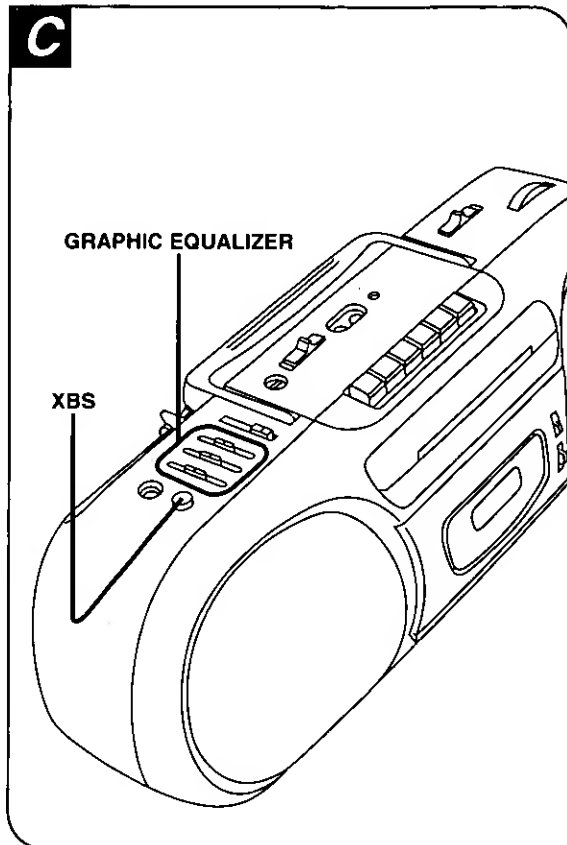
When playback has been completed in the forward direction, tape switches automatically to the reverse direction. The auto stop mechanism functions at the end of the tape.

Repeat two-side playback mode ()

Playback will be repeated until the stop/eject button is pressed.

Note:

- During playback in the reverse direction, if you press the stop/eject button to stop the tape movement, and then press the playback button again, playback will begin always in the forward direction.



Making a Recording

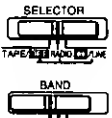
The recording level is automatically adjusted.


Auto reverse does not function during recording.

Recording and erasure of recording can be made only in the forward direction.

Recording from radio broadcasts **A**

1  Press **STOP/EJECT** to insert the tape.

2  Tune into the desired broadcast.
(See "Listening to Radio Broadcasts".)

3  Press **RECORD**.

To stop the recording:

Press **STOP/EJECT**.

To briefly interrupt recording:


Press **PAUSE**.

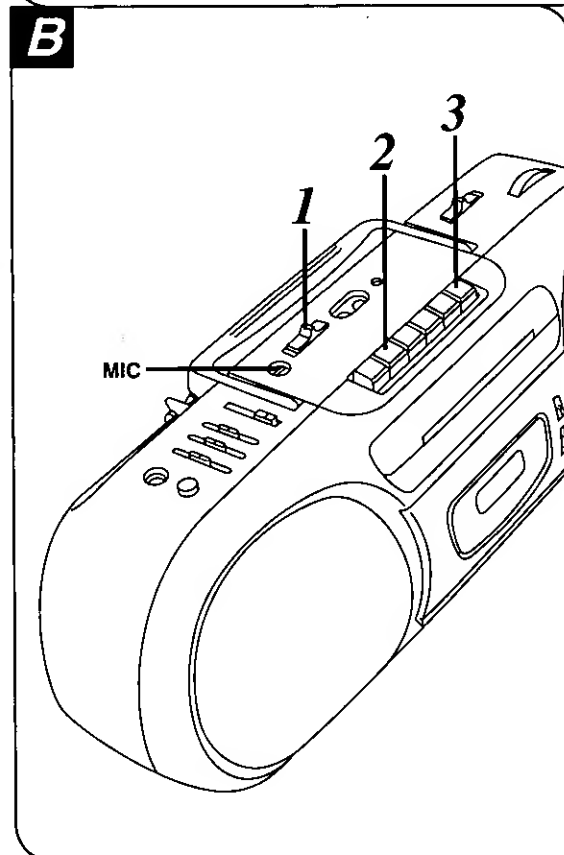
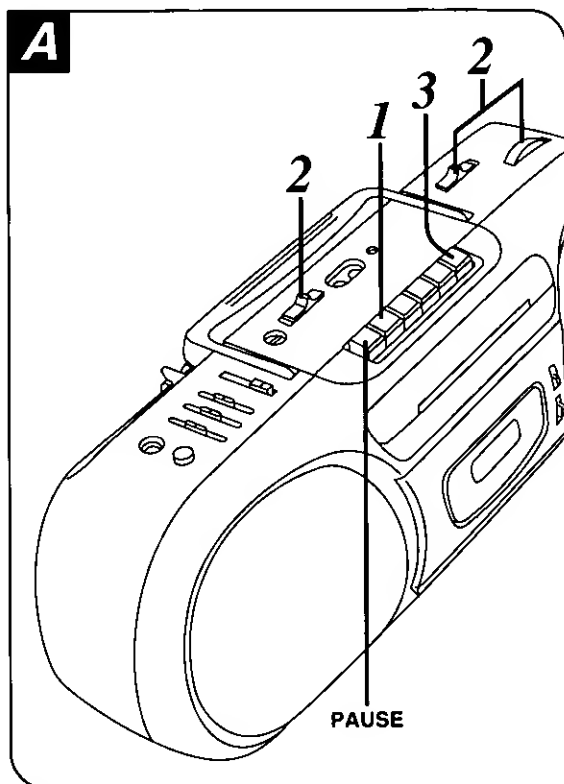
To resume recording, press **PAUSE** again.

Recording through the built-in microphone **B**




1  Set **SELECTOR** to **TAPE/ OFF**.

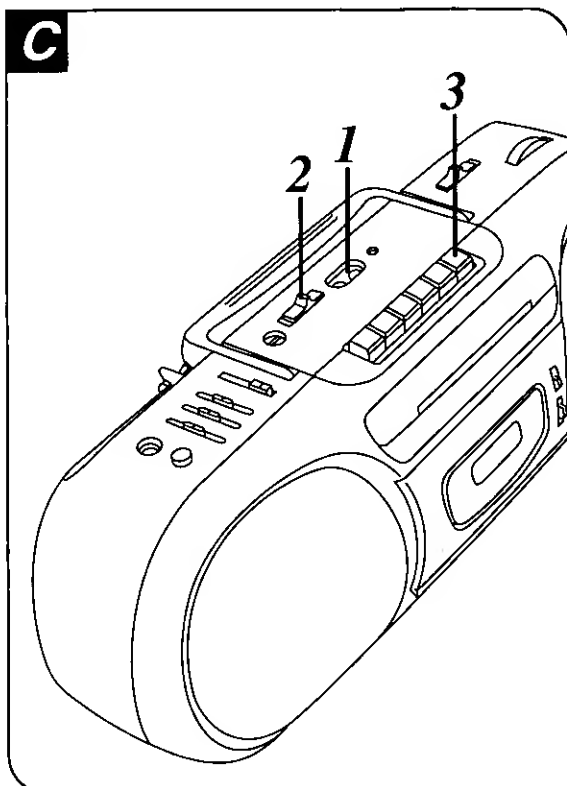
2  Press **STOP/EJECT** to insert the tape.

3  Press **RECORD**.



Recording from external equipment

- 1  Connect the output of the external equipment to **CD** /LINE IN jacks.
- 2  Set **SELECTOR** to **CD** /LINE.
- 3  Press **RECORD**.

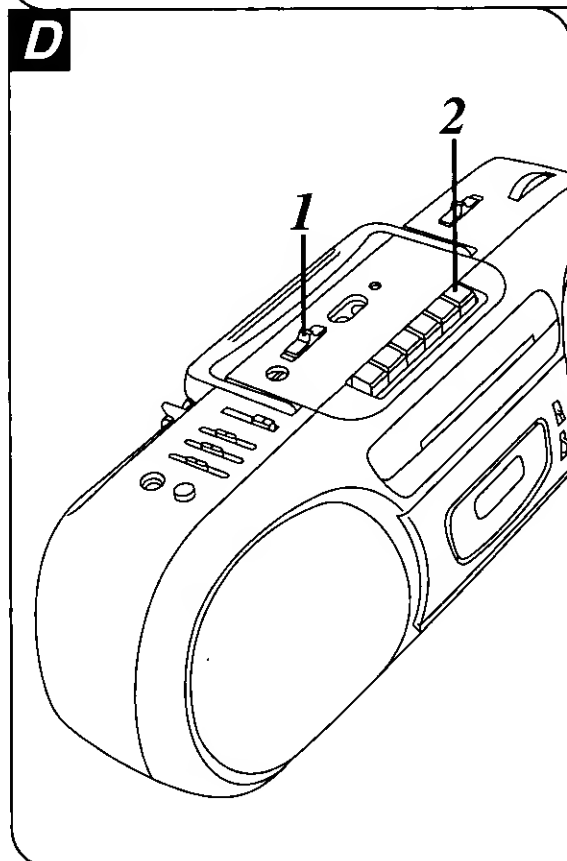


Erasure of tape

When recording, previously recorded signals on the tape will be erased automatically.

To erase a tape without re-recording, use the following procedure. (Make no connections to the **CD** /LINE IN jacks.)

- 1  Set **SELECTOR** to **CD** /LINE.
- 2  Press **RECORD**.



Pause button:

Before beginning a recording, first press and lock **PAUSE**. Then press **RECORD**. (The tape will not move.)

When ready to record, press **PAUSE** to release it. This will start tape movement for immediate recording. Do not use **PAUSE** to stop the tape for a long period of time.

Monitoring:

The monitor system enables you to listen, through the speakers or headphones, to the sound as it is being recorded.

When recording from the built-in microphone the sound being recorded cannot be monitored.

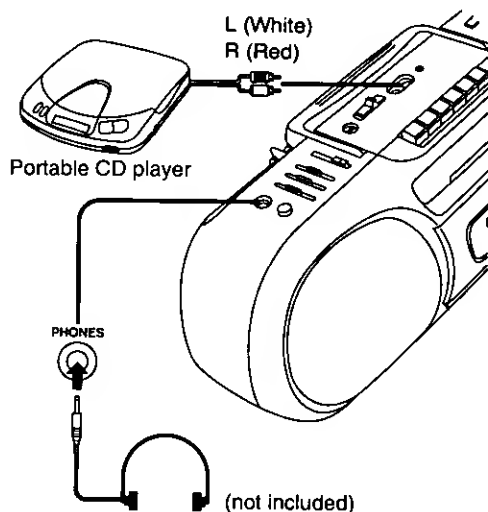
Connections

How to use headphones

- Reduce the volume level. Connect the headphones (not included) to the headphones jack.
- Avoid listening for prolonged periods of time to prevent hearing damage.
- Speakers are automatically cut off when the headphones are connected.

How to connect portable CD player

- When listening or recording CD, set SELECTOR to **[CD]** /LINE.
- When not using the **[CD]** /LINE IN jacks, disconnect connector from it.



Care & Use

Concerning cassette tapes

Selection of cassette tapes

You can use normal tapes only.

Cassette tapes exceeding 90 minutes:

These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the deck mechanism.

If the tape loosens, take up the slack

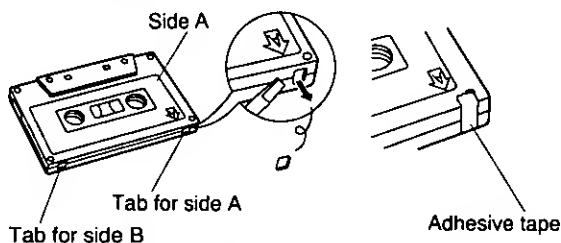
Tape slack may cause the tape to break.



To prevent erasure of recorded sounds

Remove the erase-prevention tabs with a screwdriver or a similar object.

To re-record on a protected cassette, cover the slot with adhesive tape.



Improper tape storage:

You can damage tapes if you store them in the following places:

- In high temperature [35°C (95°F) or higher] or high humidity (80% or higher) areas
- In a strong magnetic field (near a speaker, on top of a TV, etc.)

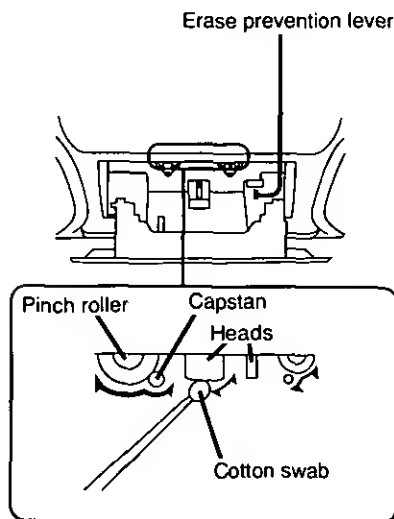
This can erase a recording.

- Areas exposed to direct sunlight

Tape head care

To assure sound quality for recording and playback, be sure to clean the tape heads after approximately every 10 hours of use.

- 1 Open the cassette compartment cover by pressing STOP/EJECT.
- 2 While pushing erase prevention lever downward, press **RECORD**.
- 3 Clean the heads, pinch roller and the capstan with a cotton swab (or a soft, lint-free cloth) slightly moistened with isopropyl alcohol. Do not use any solution other than alcohol for head cleaning.



It is recommended that the head assembly be demagnetized if distortion or poor sound quality persists after cleaning the heads.

Demagnetize them using a demagnetizer available from an audio store.

Do not attempt to remove the cover(s) or repair the unit yourself. Refer servicing to qualified personnel only.

Product information

For product service, product information or assistance with product operation, refer to the servicenter directory.

Technical Specifications

Radio

Frequency range: FM; 88–108 MHz
AM; 525–1705 kHz

Tape recorder

Track system: 4 track, 2 channel, stereo
Recording system: AC bias, magnet erase
Monitor system: Variable sound monitor
Frequency range: 70–11,000 Hz (Normal)

General

Power requirement: AC; 120 V, 60 Hz
Power consumption;
12 W
Battery; 9 V
(six "D" size batteries)

Speakers: 2 Woofers; 10 cm (4")
2 Tweeters; 1.5 cm (9/16")

Jacks:
Input; CD/LINE IN; 316 mV/47k Ω
Output; HEADPHONES; 32 Ω

Dimensions (W×H×D): 460×149×151 mm
(18 1/8"×5 7/8"×5 15/16")

Weight: 2.4 kg without batteries
(5 lb. 5 oz.)

Note:

Specifications are subject to change without notice.
Weight and dimensions are approximate.

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